

‘Aha Huliko’a Workshop Series

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Award Number: N00014-98-1-0207

Award Number: N00014-00-1-0168

LONG-TERM GOAL

The goal of the workshop series is to review the state-of-the-art, to identify areas of ignorance, and to make recommendations for future research on a topic or topics relevant to the Office of Naval Research.

SCIENTIFIC OBJECTIVES

The participants of the 1999 workshop were tasked to assess the state of our understanding of the dynamics of oceanic internal gravity waves, with focus on processes at or near boundaries.

The participants of the 2001 workshop will be tasked to assess the state of our understanding of the processes that convert variance from the eddy to the molecular scale and that may need to be parameterized in ocean models. This scale range is a highly complex and not yet fully understood dynamical regime and includes eddies, fronts, internal waves, vortical modes, stratified turbulence, double diffusion and mixing.

APPROACH

A four-day workshop with the title “From stirring to mixing in a stratified ocean” will be held from January 16 to 18, 2001 in Honolulu, Hawaii. The workshop will bring together about thirty observationalist, theoreticians and numerical modelers.

WORK COMPLETED

A four-day workshop on “Dynamics of oceanic internal gravity waves” was held from January 19 - 22, 1999, in Honolulu, Hawaii. The workshop brought together observationalists, theoreticians and numerical modelers. The lectures of the participants are published in Muller and Henderson (1999). A summary of the workshop is given in Muller and Briscoe (1999)

RESULTS

The 1999 workshop showed that a clear distinction must be made between the near-inertial peak, the tidal peaks, and the internal wave continuum since their dynamics differ. It also advocated a view of the oceanic internal wave field as a radiative phenomenon. In oceanic general circulation models, the internal wave field should be treated as an additional radiative field, similar to the way that light from the sun is treated in atmospheric general circulation models.

IMPACT/APPLICATION

TRANSITIONS

RELATED PROJECTS

REFERENCES

Müller, P. and D. Henderson, 1999: "Dynamics of oceanic internal gravity waves, II." Proceedings, 'Aha Huliko'a Hawaiian Winter Workshop, School of Ocean and Earth Science and Technology, Special Publication, 294pp.

Müller, P. and M. Briscoe, 2000: Diapycnal Mixing and Internal Waves, *Oceanography*, **13**, 98-103.